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EXAMINER	
KAZEMINEZHAD, FARZAD	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
08/02/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/581,434	SATO, YASUSHI	
	Examiner	Art Unit	
	FARZAD KAZEMINEZHAD	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *1-13,16,17,19,21-23,25-27 and 29-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the office action from 1/25/2010, the applicant has submitted an amendment, filed 5/2/2011, amending claims 14, 20, 24, 28, 33, cancelling claims 7-13, 23, 27, and 32, while arguing to traverse the prior art rejections. Applicant's arguments have been fully considered but they are moot with respect to new grounds of rejection further in view of new embodiments in Takagi et al. (US Patent 6,980,956).

2. In response to the cancellation of the claim 32, the examiner has withdrawn the previous objection of the said claim.

Response to Arguments

3. On page 6 the last ¶, the latest amendment to claim 14 is discussed; i.e., on lines 4-6 it is asserted: "Moreover, a device control device such as that described in paragraph [0085] of the specification can count the number of transitions (jumps) from one process item to another process item that have not been defined as transition definition data, and automatically add new transition definition data indicating this transition when this number reaches a predetermined number". As this teaching, which maps to the latest amendment to the last limitation of claim 14, constitutes a new limitation, the applicant is respectfully directed to the office action that follows for more details. However, this teaching could not be found in ¶ 0085 of either the published or the PALM version of the specification and the examiner laboriously found it in ¶ 0137 of the PALM version which corresponds to ¶ 0222 of the published version. It is crucial for the applicant to point the examiner to the correct location of material which supports a

claim amendment to avoid receiving "lack of written support" or indefiniteness rejections which may delay prosecution.

4. Page 7 further provides arguments about the latest amendments and the applicant is therefore directed to the office action for more details.

5. Regarding the dependent claims the applicant asserts them to be patentable by virtue of their dependence on the "patentable claim 14" without discussing their own potential patentable subject matters and the applicant is therefore directed to the office action that follows for more details.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 14-15, 18, 20, 24, 28, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi, in view of Takagi et al. (US Patent 6,980,956).

Regarding claim 14, Sekiguchi does teach a device control device that has process-item data storing means which stores a plurality of process items for executing processes corresponding to recognized information obtained by recognizing input information (Col. 3 lines 20-25 teach a database in which words corresponding to instructing operations of the apparatus (i.e. words associated with a plurality of process items for executing operations (processes)) are stored; each word is processed

(recognized) by natural language information; Col. 7 lines 53-55 referring to Fig. 2 teach these words are stored in the database unit 42);

and, defines transition from one process item in the plurality of process items to another process item by transition definition data which associates a discrimination condition (Col. 3 lines 35-37 teach a behavior pattern is associated with each word stored in the database unit 42 in Fig. 2 where each behavior pattern defines a certain state of the apparatus and thereby triggering it will result in a transition of the state of the apparatus; Col. 7 lines 63-66 teach the behavior database unit 45 in Fig. 2 stores the behavior data (i.e. transition-definition data for plurality of process items), where the said words are each associated with a certain behavior (discrimination condition)),

wherein said recognized information includes a likelihood indicating a status of matching between input information input by a speech and said discrimination condition included in said transition definition data (Col. 13 lines 43-51 teach a characteristic comparison classification unit 3 (Fig. 1) (associated with behavior (transition definition data associated with a behavior (discrimination condition))) residing in a sensor (part of the apparatus (e.g. robot)) are utilized to compare (determine the likelihood (see below) of matching between) input data corresponding to recognized information to the input (unit 1) with words (corresponding to actions) registered in database; Col. 14 lines 13-21 teach the comparison is made by using a formula which enables to judge if two values are matched based on their "distance" which is numerical value; Col. 14 lines 40-41 teach the formula enables judging if two values are matched the smaller that "distance" is and thereby that "distance" is inversely correlated with their likelihood of

matching; Col. 14 lines 46-49 teach that formula is specifically utilized in matching input data (information) and characteristic data (which is correlated with behavior data (transition-definition data associated with the discrimination condition))),

Sekiguchi does not specifically disclose said device changes said weighting factor in accordance with a link to said input information and generates a flowchart of process items by deleting said transition definition data thus defined when a product of said weighting factor thus changed and said likelihood do not reach a predetermined value and adding new transition definition data indicating said transition when the number of transitions from one undefined process to another undefined process item reaches a predetermined number.

Takagi et al. does teach a device changes said weighting factor in accordance with a link to said input information and generates a flowchart of process items by deleting said transition definition data thus defined when a product of said weighting factor thus changed and said likelihood do not reach a predetermined value (The combination of equations in Col. 7 line 26 and 36 teach a new transition probability P'_m replaces (deletes) P'_0 (product of weighting factor (1+L) and likelihood P_0) as the weight factor (1+L) is changed by a factor 1/M till "voice" (link to input) "of a predetermined pattern is detected" according to Col. 13 lines 33-36 (the new transition probability P'_m reaches a predetermined value and the old transition probability P'_0 no longer reaches a predetermined value to enable matching for voice of the "predetermined pattern"); i.e., Col. 7 line 35 corresponding to the flow chart step S5 in Fig. 7 teaches: "$P'_m=P_m-(P'_0-P_0)/M$", where P'_0 according to Col. 7 line 26 corresponding to the flow chart step S6 of

Fig. 7 is "$P'_0=P_0(1+L)$" and according Col. 7 lines 23-24 P_0 "indicates the original transition probability" (original transition likelihood), and "1+L" signifies a weight factor; here the transition probability or likelihood (.e.g., P'_0) is "changed" (to P_m') "only when voice of a predetermined pattern is detected" (Col. 13 lines 33-36) which depends on the voice (link to input) and also depends on the behavior transitions)

and adding new transition definition data indicating said transition when the number of transitions from one undefined process to another undefined process item reaches a predetermined number (Col. 7 lines 32-37 referring to Eq. $P'_m=P_m-(P'_0- P_0)/M$ teach "P'_m indicates the new transition probability" (i.e. a new transition definition data added), "and M+1 indicates the total number of behaviors transferred from the preceding behavior" (transition probability P'_m is used or added tantamount to a predetermined number M signifying the number of behavior transitions from one undefined process to another beginning with the original behavior P'_0 till the robot reaches behavior or process identified by the index "M"); Col. 7 lines 38-42 teach: "newly computed transition probability P'_0, P'_1, ..., P'_M, is provided for the behavior generation selection program module MO2, and the transition probability of the probability automaton as a behavioral model is updated").

It would have therefore been obvious to one with ordinary skill in the art at the time the invention was made that utilizing the transition probability modules and methods of Takagi et al. into the device operation apparatus of Sekiguchi by incorporating Tagaki et al.'s modules MO2 and MO4 in Fig. 4 of and their respective methods into the behavior selector unit 44 of Fig. 2 of Sekiguchi would enable the latter

to multiply a weight factor by each state (behavior or process item) determined to correspond to input command obtained by the distance similarity formula (likelihood) that the device is commanded to transform, where the weight factor represents parameters of the stimulus such as the praise, scolding or loudness of the voice of the user commanding the device which will alter the resulting behavior of the device and also to further alter the weight factor to describe a state having undergone many transitions.

Regarding claim 15, Sekiguchi does teach the device control device according to claim 14, wherein said process-item data storing means is constituted in such a manner that a process item can be added adequately (Col. 22 lines 40-51 referring to the flow chart in Fig. 24 demonstrates that the process of utilizing the word provision unit 48 (Fig. 2 and 3) and thereby adding a word which defines a state (transition definition data) follows the judgment unit 47 assessing whether or not the input data (corresponding to the transition definition data) abides by the criteria (conditions) set forth in the model and therefore adequate measures are taken before adding the word corresponding to the data to the word provision unit 48).

Regarding claim 18, Sekiguchi does teach the device control device according to claim 14, wherein said input information is a speech signal (Col. 7 lines 49-51 teach that the input process unit 41 in Fig. 2 is capable of receiving "word spoken by a man" (i.e. speech), and Col. 9 lines 18-20 teach the unit to possess speech recognition function),

the condition of said transition definition data is a word subject to speech recognition (Col. 9 lines 14-17 teach there exists an association between each spoken word W and a word data Wd which is stored in the behavior database unit 45 and which is associated with a behavior (causing or defining a transition of state of the device (e.g. robot)); i.e., the stored word data Wd defines a condition or state of the device; Col. 9 lines 32-36 teach if there exists a match (speech recognition is successful) between word data (input) and one of the stored behavior data (transition definition data) then the behavior pattern is executed),

said recognized information includes a likelihood indicating a status of matching between the speech signal and the target word of said transition definition data (Col. 13 lines 43-51 teach a characteristic comparison classification unit 3 (Fig. 1) residing in a sensor (part of the apparatus (e.g. robot)) are utilized to compare input data corresponding to recognized information to the input (unit 1) with words (corresponding to actions) registered in database; Col. 14 lines 13-21 teach the comparison is made by using a formula which enables to judge if two values are matched based on their "distance" which is numerical value; Col. 14 lines 40-41 teach the formula enables judging if two values are matched the smaller that "distance" is and thereby that "distance" is inversely correlated with their likelihood of matching; Col. 14 lines 46-49 teach that formula is specifically utilized in matching input data (information) and characteristic data (which is correlated with behavior data (transition-definition data)),

said likelihood corresponding to the target word of said transition

definition data is set in said transition definition data (Col. 14 lines 19-22 teach utilizing the numerical distance (inversely correlated to the likelihood of matching) value to determine if the input word matches with a word (target word of said transition corresponding to an action) in the database by comparing the numerical (score) with a threshold; Col. 15 lines 1-2 teach if the data are matched, they are registered (set) and for the example of comparing an input with data groups (corresponding to transitions) as disclosed in Col. 14 lines 46-49, therefore the input is registered (set) with the data group (transition data))

, and

a piece of said transition definition data is selected in accordance with said likelihood, and a state is transitioned to a process item represented by said selected piece of transition definition data (Col. 7 lines 56-62 and Col. 23 lines 19-23 teach a behavior execution unit 46 in Fig. 2 which executes (thereby selects in accordance with) the behavior pattern (corresponding to the transition) corresponding to a recognized word associated with the behavior resulting in a transition of state of the device (e.g. robot))).

Regarding claim 20, Sekiguchi does not specifically disclose the device control device according to claim 14, wherein a transition constant which is a calculation standard for said weighting factor is set as a constant corresponding to said transition definition data,

and a weighting factor of transition definition data relating to another process item linked to one process item whose status is transitioned is calculated by accumulating said constants from the constant for transition definition data relating to one process item to the constant for transition definition data relating to the another process item.

Tagaki et al. does teach a transition constant which is a calculation standard for calculating said weighting factor is set as a constant corresponding to said transition definition data (Col. 7 lines 60-65, the factorsl/M and 1 or lines 25-30 the factors L and 1 in the factor (L+l) comprise constants (transition constants (see below)) enabling calculating the change (as weighting factors) in transition probability (transition definition data) corresponding to the robot behavior transitions; Col. 5 lines 51-67 and Col. 6 lines 1-3 referring to the modules M02 and M04 in Fig. 5 teach the transition probability of making transition from one state (process item) to another state (process item) is updated by raising or lowering it by a predetermined (constant) amount of for example 10% which in one example in Col. 7 lines 24-29 it is assigned the value L and for Col. 7 lines 60-65 the value 1/M and these constants according to Col. 13 lines 32- 37 are correlated to the way a stimulus by a user such as tone of his voice is inputted);

and a weighting factor of transition definition data relating to another process item linked to one process item whose status is transitioned is calculated by accumulating said constants from the constant for transition definition data relating to one process item to the constant for transition definition data relating to the another process item (Col. 7 lines 25-27 teach a formula using the weighting factor (l+L) which

is a sum (an accumulation) of constants 1 and L where the former is associated with the previous state Po (corresponding to the previous process item or behavior) and the latter to the updated state "Po L" (another process item) which includes the predetermined constant L in determining the final transition probability Po' (the final process item linked to the process item described by Po));

It would have therefore been obvious to one with ordinary skill in the art at the time the invention was made that utilizing the transition probability modules and methods of Takagi et al. into the device operation apparatus of Sekiguchi by incorporating Tagaki et al.'s modules M02 and M04 in Fig. 4 of and their respective methods into the behavior selector unit 44 of Fig. 2 of Sekiguchi would enable the latter to multiply a weight factor by each state (behavior or process item) determined to correspond to input command obtained by the distance similarity formula (likelihood) that the device is commanded to transform, where the weight factor represents parameters of the stimulus such as the praise, scolding or loudness of the voice of the user commanding the device which will alter the resulting behavior of the device.

Regarding claim 24, the claims' limitations are identical to the limitations of the claim 14 and are therefore rejected under similar rationale. The speech recognition device is incorporated to the unit 41 (input process unit) of Sekiguchi.

Regarding claim 28 the claim limitations are identical to the limitations of the claim 14 and are therefore rejected under similar rationale. The functions of an agent

device are inherently performed by the modules (in both Sekiguchi (Figs. 2 and 3) and Takagi et al.(Fig. 4)) used for the claim 14.

Regarding claim 33, the claim's limitations correspond to the method limitations of the systems of claim 14 limitations and are therefore rejected by the same rationale. Sekiguchi and Takagi et al. both teach systems and their respective methods.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARZAD KAZEMINEZHAD whose telephone number is (571)270-5860. The examiner can normally be reached on M-F 8:30AM-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on (571)272-7628. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/FK/

/Talivaldis Ivars Smits/ 07/27/2011
Primary Examiner, Art Unit 2626